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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/599,302	09/25/2006	Sadamichi Takakusaki	14225-113US1	6685

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EXAMINER

NORRIS, JEREMY C

ART UNIT	PAPER NUMBER
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2841

NOTIFICATION DATE	DELIVERY MODE
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06/29/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATDOCTC@fr.com

Office Action Summary	Application No. 10/599,302	Applicant(s) TAKAKUSAKI ET AL.	
	Examiner Jeremy C. Norris	Art Unit 2841	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,2,4-12 and 14 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) 3 and 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/06,9/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on 29 March 2004. It is noted, however, that applicant has not filed a certified copy of the application as required by 35 U.S.C. 119(b).

Claim Objections

Claims 11-14 are objected to because of the following informalities: each of the claims state the limitation "the method of claim 8 or claim 9". However, claim 8 is not a method claim. For examination purposes, the Examiner has interpreted this limitation as "the method of claim 9 or claim 10" as these are the preceding method claims. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4-12, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by US 6,166,333 (Crumly).

Crumly discloses, referring primarily to figures 1-13, a circuit device comprising: a circuit board (24), an insulating layer (20) formed on the circuit board, a conductive pattern (17) formed on the insulating layer, a circuit element (29) electrically connected

Art Unit: 2841

to the conductive pattern, wherein a protrusion (22) partially extending and being buried in the insulating layer is provided on the circuit board [claim 1], wherein the protrusion and the conductive pattern are put in direct contact [claim 2], wherein the protrusion is provided on the circuit board at a location corresponding to a lower part of the conductive pattern having the circuit element disposed thereon [claim 4], wherein the circuit board is formed of a metal mainly comprising copper (col. 2, lines 15-20) [claim 5], wherein the protrusion has a column-like shape [claim 6], wherein a semiconductor element having no terminals on a back surface thereof is employed as the circuit element; the protrusion is provided on the circuit board at a location corresponding to a lower part of the conductive pattern having the semiconductor element attached thereto; the conductive pattern having the semiconductor element attached thereto and the protrusion are in direct contact [claim 7], wherein a convex portion is formed in a rear surface of the conductive pattern located above the protrusion and the convex portion is buried in the insulating layer [claim 8].

Similarly, Crumly discloses, a method of manufacturing a circuit device forming an electrical circuitry comprising a conductive pattern (18) and a circuit element (29) provided on a circuit board (24) via an insulating layer (20), including providing a protrusion (22) extending partially on the circuit board; burying the protrusion into the insulating layer [claim 9].

Additionally, Crumly discloses, a manufacturing method of a circuit device comprising: providing a protrusion (22) extending partially on a circuit board (24); attaching a conductive foil (18) on the circuit board via an insulating layer (20) covering

Art Unit: 2841

the circuit board so as to bury the protrusion; forming a conductive pattern by patterning the conductive foil; electrically connecting the conductive pattern with a circuit element (290 [claim 10], wherein the protrusion is formed by etching (col. 2, lines 1-20) [claim 11]., wherein the protrusion has a column-like shape [claim 12], wherein sidewalls of the protrusion are formed to have a curved surface [claim 14].

Allowable Subject Matter

Claims 3 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Claim 3 states the limitation “wherein the insulating layer is provided between the protrusion and the conductive pattern”. This limitation, in conjunction with the other claimed features, was neither found to be disclosed in, nor suggested by, the prior art. Claim 13 states the limitation “wherein an upper surface of the protrusion is formed to be planar and an insulating layer is interposed between the protrusion and the conductive pattern”.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy C. Norris whose telephone number is (571)272-1932. The examiner can normally be reached on Monday - Thursday, 8:00 am - 5:00 pm.

Art Unit: 2841

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean A. Reichard can be reached on 571-272-1984. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jeremy C. Norris
Primary Examiner
Art Unit 2841

/Jeremy C. Norris/
Primary Examiner, Art Unit 2841